

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/113502 A2

(51) International Patent Classification?: **C12N**

(21) International Application Number:
PCT/US2004/019286

(22) International Filing Date: **17 June 2004 (17.06.2004)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:
60/480,013 20 June 2003 (20.06.2003) US
60/517,369 5 November 2003 (05.11.2003) US

(71) Applicant (for all designated States except US): **AVALON PHARMACEUTICALS, INC.** [US/US]: 20358 Seneca Meadows Parkway, Germantown, MD 20876 (US).

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **IDENTIFICATION OF THERAPEUTIC AGENTS USING GENETIC FINGERPRINTING**

(57) Abstract: Methods for identifying compounds having similar biological activity based on similarity in genetic expression profile in cells contacted with one or more of said compounds, along with specifically identified compounds, are disclosed.

WO 2004/113502 A2

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/113502 A3

(51) International Patent Classification⁷: **G01N 33/48**,
C12Q 1/68

(21) International Application Number:
PCT/US2004/019286

(22) International Filing Date: 17 June 2004 (17.06.2004)

(25) Filing Language: English

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Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
26 January 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/113502 A3

(54) Title: IDENTIFICATION OF THERAPEUTIC AGENTS USING GENETIC FINGERPRINTING

(57) Abstract: Methods for identifying compounds having similar biological activity based on similarity in genetic expression profile in cells contacted with one or more of said compounds, along with specifically identified compounds, are disclosed.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/19286

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01N 33/48; C12Q 1/68

US CL : 702/19; 435/6

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 702/19; 435/6

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/0180808 A1 (Natsoulis et al) 25 Sept. 2003 (25.09.2003).	1, 3-5, 7-8, 16
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Y		2, 11-13
X	WO 03/023066 A1 (Bristow et al) 20 March 2003 (20.03.2003).	1-5, 7-8, 16
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Y		11-15
Y	US 5,624,819 A (Skolnick et al) 29 April, 1997 (29.04.1997), col. 2-4.	2, 12-13
Y	US 6,617,335 A (Wang et al) 9 Sept. 2003 (9.9.2003).	11
Y,P	US 2003/0219768 A1 (Beebe et al) 27 Nov. 2003 (27.11.2003).	1-5, 7-8, 11-16
Y	WO 01/92567 A2 (Bunk et al) 6 Dec. 2001 (6.12.2001).	1-5, 7-8, 11-16

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

07 September 2005 (07.09.2005)

Date of mailing of the international search report

23 NOV 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/19286

Continuation of B. FIELDS SEARCHED Item 3:

East, STN, Biosi, Compuscience, Biotechds, Biotechno; Medline, Embase, WPI covering search terms: compound, drug, expression profile, selected activity, change expression, synthesis rna, transcription, array, camptothecine, cancer, colon cancer, physiologica, therapeutic activity, screening, mRNA.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/19286

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
See for lack of utility form PCT/ISA/206.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
 2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.
 3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
 4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-5,7,8 and 11-16
- Remark on Protest**
- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.